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9   packet containing an identifier for said second system, wherein said request packet

10   requests information on whether said second system is connected directly to said layer-2

11   device;

12   determining in said layer-2 device whether said layer-2 device is connected directly

13   to said second system;

14   generating in said layer-2 device a response packet, wherein said response packet

15   indicates whether said second system is connected directly to said layer-2 device; and

16   sending from said layer-2 device to said central device said response packet

17   irrespective of whether said central device is in said route or whether said layer-2 device

18   is a last device in said route.

1   36. (Currently Amended): The computer readable medium of claim 35, wherein

2   said generating further comprises:

3   identifying in said layer-2 device a next device, wherein said next device is next to

4   said layer-2 device in a route from said first system to said second system; and

5   including data identifying said next device in said response packet.

1   37. (Currently Amended): The computer readable medium of claim 36, wherein

2   said identifying comprises:

3   examining a table in said layer-2 device to determine a port on which said second

4   system communicates; and

5   locating a device connecting on said port, wherein said located device comprises

6   said next device.

1   38. (Original): The computer readable medium of claim 37, wherein said locating

2   comprises:

3   receiving a neighbor packet from said next device on said port indicating a next

4   device identifier identifying said next device; and

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5   including said next device identifier in said response packet.

1   39. (Currently Amended): A device for supporting the tracing of a route containing

2   a sequence of layer-2 devices between a first system and a second system, said device

3   being comprised in a network based on broadcast medium, said device comprising:

4   an inbound interface receiving a request packet <u>from a central device, said request</u>

5   <u>packet</u> containing an identifier for said second system, wherein said request packet

6   requests information on whether said second system is connected directly to said device;

7   a next hop block determining whether said device is connected directly to said

8   second system;

9   a generate request/response block generating a response packet, wherein said

10   response packet indicates whether said second system is connected directly to said device;

11   and

12   an outbound interface sending said response packet <u>to said central device</u>

13   <u>irrespective of whether said central device is in said route or whether said device is a last</u>

14   <u>device in said route</u>.

1   40. (Currently Amended): The <u>layer-2</u> device of claim 39, further comprising:

2   a memory storing a first table and a second table, said first table indicating a port

3   on which each system communicates, said second table indicating a device connecting to

4   each port; and

5   a port determination block determining a port on which said second system

6   communicates,

7   wherein said next hop block examines said second table to determine said a next

8   device according to the port determined by said port determination block, wherein said

9   next device is contained in said sequence of layer-2 devices.

1   41. (Currently Amended): The <u>layer-2</u> device of claim 40, wherein said next hop

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2   block determines that said second system is directly connected to a first port indicated by

3   said first table if no device is associated with said first port in said second table.

1   42. (Currently Amended): The layer-2 device of claim 39, further comprising an

2   user interface receiving said a trace command from a network administrator.

1   43. (Currently Amended): The layer-2 device of claim 42, wherein said layer-2

2   device is not directly connected to said first system, said layer-2 device further comprising

3   a control logic to trace a directly connecting device connecting directly to said first system,

4   wherein said route is traced from said directly connecting device using said inbound

5   interface, said outbound interface, said next hop block and said generate request/response

6   block.

1   44. (Currently Amended): The layer-2 device of claim 42, wherein said layer-2

2   device is not directly connected to said first system, said layer-2 device further comprising

3   a control logic to trace a directly connecting device connecting directly to said first system

4   by sending a multicast packet.

1   45. (Currently Amended): The layer-2 device of claim 39, further comprising a

2   response processor to receive a response packet, wherein said response packet indicates

3   a next device in said route, wherein said generate request/response block generates another

4   request packet directed to said next device, wherein said another request packet requests

5   said next device to indicate whether said second system is connected directly to said next

6   device.

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